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## ORIGINAL ARTICLES.

### LYMPHANGIOMA CAVERNOSUM OF THE ORBIT, WITH AN ORIGINAL CASE.

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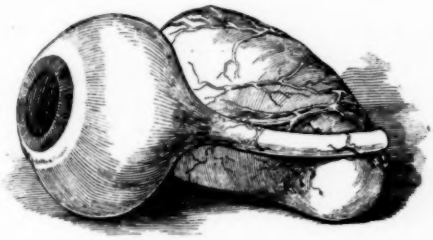
Mr. C., æt. 53, was first seen May 15, 1894. At that time there was a well-marked proptosis of the right eye, which he said had been coming on for about three years. He had had no pain in the eye or orbit. He could count fingers at 3′ but the inner field seemed to be more sensitive than the outer field. There was well marked optic neuritis. Motion of the eye was unimpaired. The diagnosis given was a probable sarcoma commencing in the apex of the orbit.

He has generally enjoyed excellent health and has been an active business man. Family history: His father died at 70 and his mother at 83; one sister living and in good health, and two sisters deceased—one from a malignant growth and one from child-birth. It was impossible to detect any growth around the rim of the orbit and it seemed evident that the

growth, whatever it might be, was located in the apex of the orbit and was pressing the eye directly forwards.

He was not seen again until November 25, 1894. In the meantime the tumor had grown very considerably, and the proptosis was very marked. The eye now stands about 8 mm. in advance of the plane of the left eye. Motion upward was limited and the eye diverged as if pushed out in the axis of the orbit. The optic disc was very considerably swollen, and vision was 0.2. Within the past few weeks he has had three severe attacks of pain in the head, and during them he had a tingling sensation in the right side and some delirium. There has also been at times a well marked mental hebetude. He became listless and sleepy, and lost interest in everything around him. When his wife would read to him, he would fall asleep or would lose connection in what was read or in conversation. He has had a large number of nasal polypi removed within the past year, but there was no evidence of any malignant growth in the nasal fossæ. The increasing exophthalmos and the mental hebetude and the attacks of pain in the head made him decide to submit to surgical interference for relief. There is no evidence of any growth in the orbit from palpation, nor was there any bruit or pulsation. He was told that an attempt would be made to remove the tumor and save the globe, if such was found practicable after its size and character had been sufficiently obtained in the first steps of the operation. The external rectus was first severed, leaving a stump on the sclerotic, so that it could be used for reuniting the muscle in case the tumor could be removed without sacrificing the eye. After getting an opening sufficiently large for me to make an exploration with my finger, I found that I had to deal with a large elastic tumor, which grew within the muscular funnel. The optic nerve was on its anterior surface and put greatly on the stretch. In view of the injury to all the ocular muscles and optic nerve from an attempt to remove so large a tumor, I decided to enucleate the tumor and globe together. The growth filled the bony walls of the orbit so closely that there was some trouble in detaching it, but this was finally accomplished and the optic nerve severed at the very apex of the orbit.

Macroscopically, the tumor presented a whitish appearance and was firm but elastic. The optic nerve was attached to it by bands of connective tissue. It measured 35 mm. in length; the diameter of the outer end was 22 mm., and that of the inner end 13 mm.



It is now five months since the operation and since then he has had no pain in the head, and the mental dullness and apathy have entirely disappeared. He takes an active interest in everything around him, and has regained his former activity. This has been one of the striking features of the case.

The microscopic examination was made by my friend, Dr. J. E. Griewe, whose letter I copy:

"DEAR DOCTOR:—I have examined the specimen which was removed from the orbital cavity, and I send you a few preparations stained with Boehmer's hæmotoxylin. I do not think there can be much doubt about the nature of the growth; and, while one would certainly be justified, from a macroscopic examination of the tumor, in coming upon the suspicion of echynococcus, yet there is nothing to justify the diagnosis microscopically. There are no hooklets, no charasteristic membrane, etc. The new growth, if you may call it in the strict sense of the word a new growth, is characteristic of lymphangioma. Macroscopically you will notice that the preparation shows many small cavities. The tumor itself is composed for the most part of lymphoid cells, both large and small; the cavities are for the most part lined with an imperfect layer of endothelium, and within these cavities are numer-

ous lymphoid cells lying about loosely. There are no traces of bloodvessels, and there is no evidence of glandular formation. Lymph vessels are numerous and large, and these larger ones are lined with a perfect layer of endothelium. The examination agrees also with the clinical history of the case. I think that the trouble originated from an occlusion of one or more lymph channels causing an engorgement, which in the course of so long a time resulted in a mass of this size. My diagnosis is *Lymphangioma Cavernosum.*

Very sincerely,

[Signed] J. E. GRIEWE."

The literature at my command shows only two similar tumors and probably a third. The first one is by Förster, in *Graefe's Archiv.*, vol. xxiv, 2, p. 107. The second is by Wiesner, *Graefe's Archiv.*, vol. xxxii, 2, p. 205, and the third by Dunn, *American Journal Medical Sciences*, 1894. There may be other cases of similar character, but I have not access to them. In consideration of the rarity of this disease, I have made translations from the above cases and have added notes from Ziegler and Michel

In Förster's case the tumor was situated within the funnel of the ocular muscles, as was mine, and was about the same length but broader. In this case, however, there was no mental disturbance and no pain. In mine the mental hebetude seems to have depended on the influence of the tumor. The tension of the tumor on the optic nerve must have been very considerable, as the nerve was found lying *over* its *anterior* surface. We cannot calculate from other statistics, as they are wanting, the probable or possible influence of such a stretching of the optic nerve on the brain, but in my case they seemed to stand to each other as cause and effect.

In Wiesner's case the tumor was located between the globe and the lower outer edge of the orbit, and was ovoid in shape and movable.

In Dunn's case, the patient was a leukæmic boy, eight years of age, and the tumors were above the eyes and at-

tached to the orbital arches, and there was no impairment of motion or vision.

There is an apparent inconsistency in the vision of the eye when examined in May or November. At the first date he could only count fingers at 3′ and in November he had a vision of 0.2. I can only account for the difference by the variation of pressure on the optic nerve.

I. Graefe Saemisch, Vol. vi, Prof. R. Berlin, page 700, (quoted from *Förster, Arch. für Ophthal.*, xxiv, 2, p. 108). The only case reported up to date (1875) is reported by Förster.

"For the past ten years Nicholas B. has had a steady growing protrusion of the eyeball. Status: V.=movements of the hand at one foot. The skin of the lid is red, and the veins are varicose. The globe is strongly abducted, and with difficulty pressed backward. Movements of the globe are greatly interfered with, especially upward and inward. Palpation of the orbit gives one the sensation of a slightly movable, soft, in places nodular tumor about the size of a nut. Pulsation distinct, auscultation negative. Ophthalmoscopically: White atrophy of the optic nerve with but slightly filled vessels. Clinical diagnosis: Sarcoma fibromatosum orbitæ. Enucleation of the globe and tumor. Healed in six days. No recurrence. Macroscopical examination: Within the muscular funnel to the inner side and below the globe, was found a soft elastic tumor 37 mm. long and 35 mm. broad, which was enclosed in a capsule. On section the entire tumor showed itself permeated by spaces of various sizes, between which are broad bands of fine connective tissue. Microscopically, the inner walls of the alveoli are lined with endothelial cells. The walls themselves are formed by layers of connective tissue fibres, between which are spindle cells which are arranged concentrically to these covernous spaces. The spaces contain numerous lymphoid cells, whereas the fibrillary walls show large quantities of elastic fibres and bloodvessels."

The clinical character of this tumor coincides most remarkably with that of a cavernous angioma. The slowness of

its growth, its painlessness, its seat within the muscular funnel, the retention of a certain amount of movement in all directions, its soft elastic consistence, which the specimen showed; in short, the only symptom which was lacking and which in this instance was not sought for is the swelling, to have made this a complete picture. *We must further not forget the important fact, that this even in itself rare form of tumor, a cavernous lymph-angioma, is found here for the first time in a tissue in which anatomically up to the present time no true lymph-vessels have ever been found.*

Owing to this being a single isolated case which up to date has been reported as occurring in the orbit, prompts the writer (Berlin) to give it thoughtful criticism. This would certainly not be possible if the microscopical examination of the alveolar contents had given us a completely convincing result. But he simply states: "The areolar spaces contained numerous lymph corpuscles." It certainly would have been of great importance to know whether there had been any other morphological elements present. The fact, as the author states, that the specimen was preserved for one and a half years in Mueller's fluid and alcohol before the microscopical examination was made, might certainly give us a reason for the difficulty in recognizing red blood corpuscles. The course seems to be an exceedingly slow one. Prognosis as regards the general condition is good. As a rule, as a result of pressure on the optic nerve or on the globe, or both, it leads to atrophy, even destruction of globe. Therapy: Extirpation.

*Ziegler's Pathology*, Vol. ii, page 304. Published 1891.

The angioma lymphaticum, or the lymphangioma, bears to the lymph system exactly the same relation that the angioma does to the vascular system. It consists principally of a dilatation of lymph vessel walls and the tissue between them. It is possible to differentiate between a lymphangioma simplex or telengiectasia lymphatica, ond a lymphangioma cavernosum. We must still mention a third form, the lymphangioma cystoides. As one may see from the nomenclature, the configuration and size of these dilated lymph vessels varies greatly.

In the most pronounced change veritable cysts are formed. The contents of these spaces is mostly a light and clear, exceptionally a milky lymph The condition is partially congenital, partially acquired. The congenital lymphectasies are found in various forms, as in the tongue (macroglossia), the dental arches, the lips (makrocheilia), in the skin (nævus lymphaticus), on the neck (hygroma colli congenitum), the labia majora, etc. It is not unfrequent to find the lymphectasia in the skin as an acquired condition, for example, on the thigh and on the scrotum. At times they form extensive, circumscribed, fluctuating tumors, (fig. 157). The ectatic and cavernous lymph vessels show thickened walls, and have their seat more especially in connective tissue and fatty tissue, and owing to extension of this cavernous development of lymph vessels over a large surface of the subcutaneous tissue of the skin, may cause an elephantiasis-like disfigurement of the part. Not infrequently the tissues which lie between this growth also undergo a hypertrophy. If these cutaneous lymphangiomata burst, a lymphorrhœa ensues. Not infrequently we find hyperplasia of the skin and other organs complicated by the estasia of the lymph vessels of the skin. In very exceptional cases chylangiomata of the intestinal wall and the mesentery have been found, and exceedingly seldom cystic lymphangiomata of the peritoneum.

*Michel, Augenheilkuude, 1890, page 649.*

"Cavernous angiomata and lymphangiomata may occur primarily in the orbit. They are most frequently found in the muscular funnel; less frequently between the latter and the bony wall. The latter is the case when the tumor has extended by growth, and this most frequently extends toward the roof of the orbit. The lymphangioma, it may further be stated, occurs in the latter years of life (about the 40th year) and may then occur primarily between the muscular funnel and the edge of the orbit. The symptoms at first may be very slight, simply causing a slight impediment to free movement, thus leading to diplopia. As the tumor grows the eye is pushed forward. The surface of the tumor, as a rule, is

smooth, sharply defined, moveable and compressible. Anatomically the tumor is made up of connective tissue, the alveoli are lined with endothelial cells; contents a serous fluid, containing lymphoid cells. *Lymphomata have been observed in the orbit at the same time with others in the tid, in leukæmia.*"

*Thos. J. Dunn.—Case of Leukæmia with rare lymphoid growths of orbits and parotid gland. The American Journal of Medical Science, 1894.*

Boy, 8 years, highly leukæmic Growths in the orbits were crescentic above the eyes and not firmly connected with the lids, beyond the nasal side of orbits and extended to the external canthus, and were firmly attached to the orbital arches. Not painful. Considerable exophthalmus. Motions of eyes not much interfered with. Eyes healthy otherwise. Vision normal. No autopsy allowed.

The Lymphangioma of the Eye. B. Wiesner, *Graefe's Archiv.*, vol. xxxii, B. 2, page 208.

Case seen in November, 1885. History: Patient 43 years of age. Tumor of the left lower lid. Since past two months, diplopia. Status: Weak hypermetropia. Complete loss of function of right rectus inferior. Between globe and lower outer edge of orbit is an ovoid, movable tumor, about the size of a hazel-nut, hard consistence, smooth surface. *No exophthalmus.* Diagnosis: Fibroma of the orbit in tissue between the loose peri-orbital tissue and the rectus muscular funnel. Operated one week later, November 13. Incision made parallel to the lower orbital edge just below the same and the tumor, which was loosely connected with the periorbita and muscular funnel, was easily peeled out without loss of blood. Healed by first intention. Patient discharged on the fourth day.

(*a*) *Macroscopical examination:* Tumor 77 mm. long, 9 mm. high, 5 mm. thick. On incision a serous fluid escaped. Tumor showed a cavernous structure with relatively large and some smaller spots, showing a striking likeness to the cavernous structure of the corpus cavernosum of the penis. Tumor was covered with a thin fibrous sheath.

(*b*) *Microscopical examination:* Made partially on teased preparation, partly on sections stained with hæmotoxylin. The lax tissue around the tumor is concentrically arranged, rich in fat and bloodvessels, whose walls are hypertrophied. The fat is infiltrated with lymphoid cells. Accordingly the tumor is to be designated as a *Cavernous Lymph Angioma of the Orbit.* He then quotes Förster's case.

*The Mode of Development of These Tumors.*—They must belong to the class of new formations which take their origin from embryonal tissue. This follows from some unknown cause. We must assume in the foregoing cases that in the orbital tissues at some point, the devel opment starts from (the lymph vessels have as yet not been demonstrated) the germ of the mesoderm or embryonal formative cells. In such a new growth all such tissues may be found which are destined to be developed from the mesoderm. That in any special case any particular type should predominate is not to be wondered at. In our case it assumed the character of a cavernous lymphangioma, which is rich in connective tissue, has many hollow spaces filled with lymphoid cells. The formation of bloodvessels keeps pace with the formation of connective tissue, which they nourish. In a later stage muscular fibres develop. The formative material has, however, been present from the beginning, consisting undoubtedly of a portion of the spindle cells interspersed in between the connective tissue framework. The arrangement of the muscular fibres is so far regular in that they arrange themselves in bundles; otherwise, they follow no regular type. The pressure which results from the growth of the tumor explains the inflamed condition of the vessels of the fibrous capsule, which appear to have developed from the cellular tissue of the orbit. The inflamed condition of the capsule is demonstrated by the hypertrophied walls of its bloodvessels and the lymphoid infiltration. The hollow spaces within the tumor are of very irregular form. This is the result of the outgrowth of processes, which meeting each other from opposite sides lead to the formation of

new spaces, and this going on will gradually lead to increase of the tumor.

"This tumor must be differentiated from the cavernous angioma, and in so doing I must confine myself to a clinical differential diagnosis.

"The cavernous lymphangioma has no characteristic clinical picture, so that we can show but indirectly by the clinical history that they are not cavernous angiomata. Based on a case of v. Graefe (*Graefe Saemisch*, vol. vi, p. 708) Berlin, describes the principal clinical features of the cavernous angioma. The spontaneous *increase and diminution of the swelling*, which which can also be induced mechanically. Its full, elastic but at no point hard consistence, the almost totally intact muscular movements, its seat in fatty tissue, its extremely slow development, its painlessness and lastly the otherwise good condition of the patient."

Not a single one of the symptoms was present in this case (nor in Förster's case). The increase and diminution of the swelling was entirely wanting. Förster's case showed exophthalmus, nor was the consistence like that described by von Graefe. It was hard, which could not be the case in a tumor that was changing its size and elastic. Still it is very difficult to form a correct idea as to the consistence of a tumor, especially when palpating a tumor in the orbit. Then again there was not in our case a totally intact muscular condition, for we found impairment of the external rectus. In Förster's case, in which the tumor was inside the muscular funnel, the movement was interfered with in all directions. If this last symptom were always found lacking in cavernous angiomata, and in both the other cases was found present, this could be explained by the different anatomical character of the tumors. For the angioma is compressible; hence, any interference with muscular movements can be easily overcome, whereas in the lymphangioma this can not occur, hence the interference with the muscular action. The seat of the disease, the painlessness and general condition of the patient and general symptoms do not enter into the differential diagnosis.

The other objection which Berlin makes to Förster's case I do not consider as proven. The fact that this is an isolated case simply goes to prove that it is a rare affection and it is possible that some of the cases which have been described as fibroma of the orbit were of this nature. It seems strange that Berlin is not satisfied with the statement that "the spaces were filled with lymphoid cells and contained no other morphological elements," and again his remarks about the preserving value of Müller's fluid. Examination of specimens which had been preserved for many years in Müller's fluid demonstrated the fact, that it does preserve the red blood corpuscles beautifully.

Berlin seems to be of the opinion that lymphangioma can only occur where lymph vessels are present. I here once more point to the mode of development of these tumors, and will further add Wegner's theory. (*Langenbeck Arch.*, xx). Wegner arrives at the following conclusions:

(1) Lymphangioma may develop from already existing lymph vessels, which become dilated as a result of stasis, owing to closure of larger lymph vessels; hence, as a result of ectasia with hyperplasia. A case of this kind of so-called capillary lymphangioma has been described by Ben. Israel (*Ueber Lymphangioma, Mag. Dis.*, Würzburg, 1895).

(2) A second mode of development is not from preëxisting lymph vessels, but from newly formed lymph vessels, which are the result of an active proliferation of endothelium which already exists—homoplastic neoplasm.

(3) A third form is mentioned by Wegner, in which there is also a new formation of lymph vessels, which develop from connective tissue granulation tissue, which is the result of the dilatation of spaces which gradually take on the character of lymph-carrying spaces—heteroplastic neoplasm.

# SOCIETY PROCEEDINGS.

## SIXTY-THIRD ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION, HELD IN LONDON JULY 30, 31, AND AUGUST 1 AND 2, 1895.

### SECTION OF OPHTHALMOLOGY.

[CONTINUED.]

## A DISCUSSION ON THE DIAGNOSIS OF ORBITAL TUMORS.

I.—H. R. SWANZY, F.R.C.S.I., DUBLIN.

In the diagnosis of an orbital tumor there are three questions which present themselves—first, the main question, Is a tumor of the orbit present? secondly, Is the new growth confined to the orbit, or does it extend to neighboring cavities? and thirdly, Of what kind is the new growth? The diagnosis as regards any of these points does not often occasion much difficulty in advanced stages of the disease, especially where the growth occupies the anterior part of the orbit or protrudes from it. It is rather in the early and middle stages that difficulties in diagnosis are apt to present themselves, and in this paper attention will be mainly directed to those stages. It is not intended to indicate within the scope of this paper the diagnosis of some extremely rare tumors of the orbit, such as cysticercus, plexiform neuroma, and so on.

Of the signs by which the presence of a tumor is diagnosed in its early stages by far the most important, because the

most constant, is exophthalmos. In the earliest stages of a growth which commences in the deepest part of the orbit; there may be, it is true, no exophthalmos, while other symptoms—defects of sight, pain, loss of motion—may already be present, but when the growth attains to certain dimensions, or if, in the anterior part of the orbit, there be even a small tumor, the eyeball must be pushed out of its place.

It is not necessary that I should enumerate all the other causes of exophthalmos, but assuming that they have as far as possible been excluded, exorbitism at once renders the presence of an orbital tumor almost a certainty. An important diagnostic point in connection with the exophthalmos caused by a tumor is that its direction is almost always oblique and not straight forwards, for orbital tumors commonly tend to develop more along some one wall of the orbit than along the others, and hence the eyeball becomes pushed towards the opposite side as well as forward. In cellulitis, œdema of the orbital tissues, Graves' disease, and paralytic proptosis the exophthalmos has a direction straight forwards. Tumors growing from the apex of the orbit may in their early stages cause no obliquity of direction in the displacement of the globe, and some tumors do not do so even in an advanced stage of their growth, but these stages are exceptional. Tumors, too, situated altogether within the muscular cone, of which the most common are tumors of the optic nerve, need not cause any lateral displacement of the globe. Again the exophthalmos caused by an orbital tumor naturally increases in degree slowly and gradually, differing in this respect from exophthalmos due to most of the other causes, in which either a sudden or a rapid development of the exorbitism is the rule. While tumors are sometimes present in both orbits, especially lymphoma or lympho-sarcoma, yet it is infinitely more common for one orbit alone to be diseased, and hence monolateral exophthalmos is suggestive of orbital tumor.

Although exorbitism is almost an essential, and other causes being excluded, so conclusive a sign, yet we naturally seek for additional aids in a diagnosis of such grave import.

Of these the most valuable is often obtained by palpation in the orbit, provided that the new growth has come within reach in the anterior part of the cavity. In many cases, indeed, there is no difficulty whatever in recognizing the presence of an orbital tumor by this means, the sensation obtainable by the tip of the finger pressed into the orbit being very definite; but in other cases the evidence is not so clear, and the surgeon may have a reasonable doubt as to whether there is any abnormal resistance met with by the tip of the finger. By palpation, too, we may gain some knowledge of the position, extent, shape, and consistence of the tumor, and whether it be adherent either to the walls of the orbit or to the eyeball. It is important, when practicable, to compare the result of examination of the diseased orbit with the condition of the sound orbit, and this can be done to greater advantage if palpation of the orbits be performed simultaneously with a finger of each hand.

Derangements of vision are often, but by no means always, present in early and middle stages of the growth of an orbital tumor. Their occurrence depends frequently on the rapidity of the growth of the tumor rather than upon its size. In an early stage of a rapidly increasing tumor the sudden stretching of and pressure on the optic nerve may produce absolute blindness, while in another case, with an equal degree of exorbitism, but which has been brought on by a slowly growing tumor, vision may be unaffected by reason of the optic nerve becoming gradually accustomed to the change. Yet slowly growing tumors, which spring from the optic nerve or its neighborhood, or from the deepest part of the orbit, are competent, by direct pressure on, or by implication of the optic nerve, to cause serious loss of sight, even in an early stage, and with but little exophthalmos. Optic neuritis, and, later on, atrophy, are occasionally discovered with the ophthalmoscope. Diplopia is often present when the globe is at first displaced, but disappears when the exophthalmos becomes extreme or the vision defective.

Pain is a symptom sometimes, but no means always, pres-

ent in cases of orbital tumors. It is especially liable to be complained of when the growth is increasing rapidly in size, even though it may not have attained to great dimensions. The pain is then often of a neuralgic kind, and very severe, from the unaccustomed pressure on branches of the fifth nerve in the orbit. Certain sorts of tumor are more liable to be attended by pain than others, and the nature of the pain, too, is to some extent characteristic of the sort of new growth. To this I shall have to refer later on.

Loss of power of motion of the eyeball is a very common symptom in cases of orbital tumors. It is caused in some cases by the mechanical obstruction offered by the tumor, as a result of which motion of the eyeball towards the side of the orbit on which the new growth is situated becomes defective. In other cases the loss of motion is caused by stretching of the muscles from the exophthalmos, or by implication of them in the new growth, or by atrophy of their tissue, or by paralysis of the orbital nerves from pressure. When there is little or no loss of motion, while the exorbitism is marked, the conclusion may be drawn that the tumor lies within the muscular cone.

As regards the question whether the tumor is confined to the orbit, or involves one or more of the neighboring cavities, it may be assumed that it is confined to the orbit, unless there are symptoms or signs which point in the opposite direction, and in each case these symptoms and signs ought to be looked for. Tumors may either originate in one of these spaces and grow into the orbit, which is the more common event; or, originating in the orbit, they may at a later stage spread to a neighboring space; and it is often the history or progress of the case alone that can inform us which of these events has taken place.

Tumors which originate in the frontal sinus are usually either mucocele or exostosis. Mucocele of the frontal sinus frequently extends to the ethmoidal sinus and thence first encroaches on the orbit, pushing the eyeball downwards and outwards. Sometimes there is supaorbital pain, and sometimes, when the nasal meatus has become involved, there is discharge

from the nostril. The diagnosis in these cases is often obscure. Osteoma of the frontal sinus shows itself as a slowly-growing and densely-hard tumor almost free from pain, situated along the superior margin of the orbit, extending into the latter and pushing the eyeball downwards and forwards. It may subsequently extend to the orbital plate of the ethmoid. An error in diagnosis is, I think, liable to be made, sometimes when a tumor of the frontal sinus drives the outer table downwards and forwards, and when the latter gives to the touch the sensation of a bony growth. If the tumor also involves the ethmoid cells, the lachrymal bone is apt to be driven forwards, and the liability to the error I have mentioned is further increased. This was well exemplified in a case recently under the care of my friend Mr. Kendal Franks, where a sarcoma originating in the ethmoid cells had invaded the frontal sinus and the orbit, causing marked exophthalmos, yet no soft tumor could be felt in the orbit owing to the displacement forwards of the lachrymal bone, and downwards and forwards of the roof of the orbit, a condition which at first sight suggested the presence of an osteoma of the orbit. Bony growths originating in the orbit may invade the frontal sinus, and, whether originating there or in the sinus, are liable to produce absorption of the tables of the skull without any cerebral symptoms to indicate the occurrence.

Tumors of the ethmoid cells which encroach upon the orbit are likewise most commonly either mucocele or osteoma. Mucocele of the ethmoid cells presents itself in the orbit as a tumor gradually increasing in size on the inner wall of the orbit, and pushing the eyeball outwards and forwards. When it has grown sufficiently large, palpation of it will discover fluctuation. The source of error just now referred to, when the lachrymal bone is pushed in front of a slowly-growing tumor of the ethmoid cells, must be borne in mind. The sharp posterior edge of the lachrymal bone is easily felt for and found, and will direct the diagnosis into the right channel. Mucocele of the ethmoid cells encroaching on the orbit must also be distinguished from a dermoid cyst, but to this I shall return later

on. Osteoma of the ethmoid cells appears in the orbit as a hard round swelling at the inner canthus followed by a swelling of the cheek and displacement of the eye outwards and forwards. It is apt also to extend into the nasal meatus, driving the septum out of place, and to push the hard palate downwards, so that examinations of the nose and of the mouth should be made in aid of the diagnosis. Enchondromata and fibromata also sometimes spring from the ethmoid and extend into the orbit, and malignant growths may be met with here.

Tumors that spring from the body of the sphenoid bone, or from the antrum of the sphenoid, and encroach upon the orbit or rare, and the diagnosis of their origin in an early stage is practically impossible. Here, again, the examination of the naso-pharynx is important. It is stated (Stedman Bull) that an orbital tumor—which soon causes blindness, commencing in the temporal side of the field, and leaving the fixation point unaffected to the last, while at the same time a growth appears in naso-pharynx—is likely to be one having its origin in the sphenoid antrum. Bony tumors—osteoma, hyperostosis, and exostosis—polypi, and sarcomata are the growths most frequently found to originate in the sphenoid antrum.

Tumors of the maxillary antrum sometimes erode the floor of the orbit and grow into the cavity, driving the eyeball upwards and inwards. The breadth of the cheek is increased, the nose becomes pushed towards the opposite side, and the roof of the mouth is pushed downwards. Tumors of the antrum of Highmore sometimes cause pain in the teeth or in the region of the distribution of the infraorbital nerve, and there may be a dull pain in the region of the antrum. In some cases there is a discharge of pus or of blood from the nostril.

Tumors of the brain do not often invade the orbit, and then it is tumors of the middle fossa which gain access through the sphenoid fissure and optic foramen. The diagnosis of the origin of the disease can only be made if cerebral symptoms have existed prior to any sign of a new growth in the orbit. Tumors of the pituitary body may encroach upon the orbit by way of the sphenoid fissure, and are apt to be associated with

polyuria and bitemporal hemianopsia, which serve to aid the diagnosis. A more common event, although not in an early stage of the growth, is the extension of a primary orbital tumor to the brain either along the optic nerve, through the sphenoid fissure, or through the roof of the orbit by erosion of the bone. This occurrence is usually evidenced by the presence of cerebral symptoms, but cases have been met with where no such symptoms existed, although the orbital growth had encroached upon the anterior or middle fossa of the skull.

As regards the nature of the growth which may be present, it must be admitted that, in many instances, in the early stages of a deeply seated tumor we have to rest content with an indefinite or provisional diagnosis, unless an exploratory operation, with puncture or harpooning of the mass, is practicable, and such a procedure is often called for, in order to decide not only the nature of the tumor, but also its extent and origin. Yet there are symptoms which with caution may be utilized in this branch of the diagnosis, namely, pain, marked loss of motion, pulsation, consistency, and congenital origin.

Although pain is frequently present along with orbital growths of every sort, freedom from pain of a severe kind is much more common with benign than with malignant tumors, in which latter it is often complained of even from an early stage.

Loss of motion of the eyeball of some degree will be found with nearly every orbital tumor, especially towards the side of tumor, but marked loss of motion in every direction, or in nearly every direction, while the tumor may not as yet have attained a large size, is a sign very suggestive of malignant tumor. In a case which was quite recently under my care there was complete loss of power of the third and sixth pairs, the exorbitism was directly forwards and of moderate degree, and a soft new growth could be indistinctly felt with the finger on the floor of the orbit. After removal the great mass of the tumor was shown to be fat and dense connective tissue, but towards the center of this mass was situated a small pigmented

round-celled sarcoma. There was no pain in this case, and in that particular it proved to be an exception to the general rule in malignant tumors.

Pulsation of the growth, or of the eyeball which is pushed out of place by it, points to it being one or other of certain vascular tumors in the orbit, or, which is more common, in the middle fossa of the skull. In addition to this, in these cases we expect to find characteristic *bruits* which are perceptible both subjectively to the patient and objectively to the surgeon on auscultation of the orbit and skull, and there may also be a fremitus observable on placing the hand over the eyeball. But it must be borne in mind that pulsation may sometimes be found with malignant tumors which are rich in vessels, and with non-vascular tumors situated deeply in the orbit

If a tumor be congenital, this as a rule points to its being either an encephalocele or a dermoid cyst. Dermoid cysts, although always congenital, do not often grow to any size until the age of puberty or later, and may then for the first time give rise to troublesome symptoms. An encephalocele is situated most commonly in the inner angle of the orbit, and is a striking object from the moment of birth. It is a fluctuating, semi transparent, pulsating tumor, which disappears on pressure while cerebral symptoms are simultaneously produced. Occasionally an encephalocele becomes shut off from the cranial cavity so as to form a true cyst. Pressure on it does not then cause any cerebral disturbance, and the diagnosis may be less certain.

The consistence of a tumor is a valuable guide to its nature. All the bony tumors present, of course, the sensation of dense hardness to the touch, but there are some malignant growths of such hardness that it may not be easy to tell them from the osteomata by palpation, and an exploratory puncture becomes necessary in order to to decide the point. The growth of an orbital osteoma is excessively slow, and pain is rare. In addition to the dense hardness of these tumors, their usually globular and somewhat nodulated surface, their immobility and the irdirect connection with the walls of the orbit ascertainable

by touch, are the deciding points in the diagnosis. Certain malignant growths are so soft that false fluctuation may be obtained from them, and the erroneous diagnosis of a cyst or abscess be made, and here too an exploratory operation is in its place. True fluctuation suggests the presence of a cyst, usually a dermoid cyst, a meningocele, a mucocele proceeding from the ethmoid sinus, an abscess, or very rarely an echinococcus cyst or a cysticercus. The echinococcus cysts are usually associated with severe ciliary neuralgia. To obtain fluctuation, the best method is, with the tips of all the fingers of one hand placed on the protruded eyeball, to push it suddenly backwards to its normal position, while at the same time with the tip of the first or first and second finger of the other hand on the tumor the impact of the displaced fluid contents of the tumor is observed. It is as a rule less satisfactory to endeavor with one or two fingers of each hand placed on the tumor to obtain fluctuation, for the surface which can be reached is usually small, and moreover, the force of the pressure made on it is transferred largely to the eyeball and other moveable contents of the orbit, and, consequently, the strength of the impact on the finger of the other hand is reduced. Cysts, it should be remembered, are sometimes associated with both bony and malignant tumors, and may mask the main disease, which is not discovered until operative means are being used for removal of the cyst. Some dermoid cysts, the cholesteatomata, do not afford any fluctuation.

In respect of the diagnosis of sarcoma of the orbit in its many varieties, it has been stated by a distinguished writer (Berlin) on this subject, that "When we meet with a solid tumor with nodulated surface, which does not fluctuate, does not pulsate, is not compressible nor densely hard, does not seem to be in connection with the brain, and does not proceed from the eyelids, eyeball, lachrymal gland, optic nerve, or neighboring cavities, we may conclude that we have to do with a sarcoma of the orbit." Yet we are liable to errors, for many very vascular sarcomata are compressible and may exhibit pulsation, while myxosarcomata and cystosarcomata sometimes fluctuate.

Nævus of the orbit is almost always associated with nævus of the eyelids. It is soft and somewhat compressible. The tumor swells and the exorbitism increases, if the head be held forward, or if congestion of the vessels of the head be produced in any other manner. The motions of the eyeball are much impeded, and pain is rarely complained of. These tumors are congenital.

Tumors of the optic nerve, as von Graefe pointed out, are diagnosed by the protrusion of the globe being pretty much in the direction of the visual axis, with retention of the mobility of the eyeball, and of the normal center of motion. The consistence of the tumor is soft, there is absence of pain, and in an early stage loss of sight. The increase in size of the tumor is usually slow. Palpation under chloroform may discover a tumor which is in connection with the eyeball behind, and which extends back towards the optic foramen. The diagnosis of tumors of the lachrymal gland is mainly made from the position of the growth, and the direction of the dislocation of the globe produced by it.

In conclusion, it must be admitted that the diagnosis of orbital tumors, especially in respect of their nature and extent, and as to whether neighboring cavities are involved, must in many instances remain uncertain, until in the course of the operative measures undertaken for their removal the true state of things becomes exposed.

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II.—PROFESSOR PANAS, M.D., PARIS.

## PSEUDO-MALIGNANT TUMORS OF THE ORBIT.

When we look into the annals of science we are struck by finding a number of observations of exorbitism with tumor supposed to be malignant, in which the appearance of an intercurrent erysipelas or a medical treatment employed intentionally, or by chance, has had the effect of causing the disappearance of the tumor. We nearly always infer, and often wrongly, that the case was one or orbital syphiloma. Inas-

much as syphilis stands at the head of infectious diseases, it is certainly very often the cause, but as mercury and iodide of potassium have a marked action on other things besides syphiloma, we are not justified in inferring the existence of syphilis, by reason of the happy effect of treatment, unless there be other specific manifestations. Such unjustifiable inferences are still constantly repeated, as we may see by looking over the works that have appeared recently, among others those of Maracek,[1] Campana,[2] Galezowski,[3] Haltenhoff,[4] W. H. Hennebert and Coppez.[5]

In this last work the opinion as to the syphilitic nature is based upon the cure by the mixed treatment, and upon the existence of pharyngo-nasal cicatrices only, as are observed in cases of old ozænas outside of all syphilitic contamination.

The recent communication of Esmarch in the German Society of Surgery, 1895, does not appear to be exempt from valid objections. The author enumerates cases of sarcomas and lymphadenomas of syphilitic origin having yielded to the specific treatment. He cites no fewer than forty cases—quite a great number. He thinks that the diathesis can be acquired or inherited. The cranium is the seat of predilection, and there is rapid recurrence of the tumor after extirpation. The tumors in question give way on the contrary to the treatment by ioidide of potassium, to the action of toxine, and upon the appearance of an intercurrent erysipelas. The histological examination of the neoplasm, showing the presence of granular tissue with patches of fatty degeneration and proliferation of the vascular walls, would have, according to him, a great diagnostic value.

This manner of interpreting the clinical facts, which is also the one admitted by Krause,[6] of Altona, with regard to analogous tumors—among others one of the nasal fossa cured by

[1]Wiener Klinik, 1886.
[2]Giorn. Ital. de le mal. veneree, 1871.
[3]Rec. d'Opht., 1886.
[4]Ann. d'Ocul., 1889.
[5]Ann. de Dermat. et de Syphilographie, Mars, 1895.

iodide of potassium, of some value a few ago—does not hold good, since we are beginning to recognize that a whole category of tumors reputed malignant are distinctly independent of syphilis. We think that a number of neoplasms thought to be lymphomata, sarcomata, or syphilomata ought to be attributed to the dyscrasia produced by some toxins.

The infectious principals, microbes or toxins, act by means of the venous anastomoses and by the lymphatics, or after their penetration into the entire organism. According to this there would be quite a class of infectious tumors, the syphilitic being an example, but not the only one. From considerations of this order we were led to look upon neoplasms of the orbit, especially the symmetrical ones, in a new light, and that by clinical observation. The starting point was that of a patient whose history was related in one of my clinical lectures at the Hotel Dieu.[7] He presented a double exophthalmia, simulating in all respects sarcoma, which was completely cured by the arsenical treatment in solution in the form of arseniate of soda. Iodide of potassium, on the other hand, administered by a colleague, had for effect to exaggerate the volume of the tumor, as also the exorbitism. The patient, a vigorous man of 35 years, was absolutely exempt from all syphilitic taint, but had been suffering for some years from a certain degree of ozæna accompanied by epistaxis. To explain the double exophthalmia with fixity of the eyeball, papillary stasis, and waxy chemotic ectropion of the lids we admitted a microbe infection of the cellular tissue of the orbit caused by the microbes of ozæna from the nasal fossa.

We asked ourselves whether cases of this order were not more frequent than is generally thought. An interesting fact to note was that the two tumors of firm consistence, had for principal seat the inner or nasal wall of the two orbits, causing bilateral divergent squint. Since that time we have been able to observe a young woman, not syphilitic, but affected with sarcomotous polypi of the left nasal fossa. These polypi

[6]Loc. cit.

[7]Semaine Medicale, January 23, 1895.

having been several times removed, an exophthalmia manifested itself in the left eye with marked external stabimus, and the operation demonstrated that there was no sarcoma of the orbit, but that the cellular tissue was indurated, with corresponding lateral masses of the ethmoid. On the other hand, histological examination of a fragment of the nasal polypi showed that these were composed of pure adenoid tissue in no way sarcomatous.

To explain what had occurred in the orbit we admitted that at a given time the repeated removal of the nasal polypi must have been accompanied by an infectious process which propagated itself towards the cavity of the orbit. Upon this supposition the patient was put upon an arsenical treatment, which ameliorated her condition and has preserved up to the present time the vision of the exorbitic eye.

Apropos of such interesting facts, we had the good fortune to confer with Professor Duplay and our colleague in surgery, Schwartz, and both related to us what follows: In the presence of a neoplasm of the two superior maxillary bones, occurring in a boy aged 15, well constituted and exempt from syphilis, either acquired or inherited, Dr. Schwartz, in consideration of the bilaterality of what he thought to be a sarcoma, and the young age of the patient, tried, before proceeding to the operation, the internal treatment with Fowler's solution. At the end of some weeks the tumors were completely resorbed, proving that they were not of a malignant nature.

The case of Professor Duplay concerns an adult Brazilian with a voluminous tumor of the iliac fossa presenting all the characters of pelvi-abdominal sarcoma adherent to the bone. Judging the case to be an incurable one, he prescribed the tincture of conium as a "moral medication," and to appease the pain. What was his astonishment to learn three or four months later from the patient's physician that under the influence of the conium, an old remedy reputed anticancerous and praised by Trousseau, the tumor had entirely disappeared.

Quite recently we were called in consultation with Professor Grancher by Dr. Kalt, to see a girl aged 10, well con-

stituted and absolutely exempt from all syphilitic antecedents, either personal or hereditary. There had been noticed in April, 1895, a soft tumor the size of a small nut, at the superior and internal angle of the right orbit behind the lachrymal sac. This tumor, preceded by pain in the frontal region, was adherent to the bone by a large base, and also to the internal rectus muscle, and offered the reactionary signs of an abscess. Dr. Kalt made an incision into it on the fourth day, which proved to him that the mass had the constitution of a neoplasm. Upon the examination of a small fragment which he had removed, he found it under the microscope to be composed of round cells recalling those of sarcoma. In spite of this constitution, and apart from all syphilitic manifestations, mercurial ointment and the internal treatment by the iodide of potassium were prescribed by common accord. Six weeks later the so-called sarcoma had been nearly completely absorbed. A peculiarity to note was that at the outset of the evolution of the tumor there had been for one day a flow of pus from the corresponding nostril. As the frontal sinus is hardly formed at the age of the patient (10 years), we wondered whether the case was not one of a point of ethmoidal labyrinthitis having caused the engorgemement by infection of the adjoining portion of the periosteum and of the cellular tissue of the orbit which had been infiltrated with migratory cells. It is not astonishing then that the resorption was caused by the influence of iodide of potassium combined with mercury, and we do not attribute the affection on that account to a specific cause of which no trace could be found.

In the presence of cases of that order we recalled to memory those published by others under different titles with reference to the orbit. Who does not know of the celebrated case of General Radetzky, related in the treatise of Mackenzie, where a chronic indurated abscess of the orbit was taken by the ophthalmological celebrities of that time for a malignant tumor, and which ended in a spontaneous cure? We ourselves have observed a case of the same order in the service of Velpeau, who had been mistaken in his diagnosis up to the time

when the patient, a youth aged 14, was cured after evacuation of the pus. A deep exploratory puncture with the bistoury having proved negative and confirmed Velpeau in his error, which lasted more than three months. Professor Gayet[8] observed the case of a man aged 70 affected with a double exophthalmia without any known cause. He thought that the symmetrical tumor of the two orbits should be considered one of lymphadenitis. Having made bibliographical researches, he thought to class his case with those published by Arnold, O. Becker, Leber, Reymond of Turin, and Ostwald. Delens also published in the *Archives d'Ophtalmologie*, 1886, a double orbital lymphadenoma which disappeared during an attack of cholera.

The question whether lymphadenoma could be regarded as of infectious origin appeare to us the more certain, for the reason that we had under our care a young patient affected with lymphosarcoma of the pharynx, occurring after an attempt by a colleague to remove adenoid vegetations from the nasopharynx. That presumption became a certitude since P. Delbet made his communication on the experimental inoculability of lymphadenoma.[9] On account of the importance of that work we beg permission to give a summary of it.

The proof of the infectious nature of lymphadenoma is based on the reproduction of the affection from man to the dog by inoculation of pure cultures of a particular bacillus. It was a question of a woman with generalised lymphadenoma of the specially splenic form.

Having made cultures with the blood taken from the spleen wit a Pravaz syringe, the experimenter inoculated dogs with massive doses of the pure colonies at varying intervals. The only dog that he sacrificed had been inoculated on May 16th, then on the 18th, and so on until June 15, when he was killed; half the injection had been made in the peritoneum, half in the cellular tissue. The animal having lost 9 kilos. began to diminish in weight at the rate of 2 kilos. in a fortnight. At the

[8]Revue d' Ophtalmologic, 1886 and 1887.
[9]Academie des Sciences, June 17, 1895.

necropsy the glands of the mesentery, of the meso-colon, the thoracic and the prevertebral glands, those of the right groin and of the axillary spaces were considerably hypertrophied. To be free from the objection that the polyadenits might not be in any way specific, he made cultures with the glands of the dog, and he was able to ascertain the presence of the inoculated bacillus in a pure state, while it was not to be found in the blood of the animal. Delbet promises to publish a paper later on the complete biological study of the bacillus causing lymphadenoma.

Besides the tumors of the orbit, sometimes unilateral, at other times bilateral, those having the lachrymal glands for their primitive seat must be noted. There are several varities caused by general infectious conditions, such as gonorrhœa, the eruptive fevers, influenza, mumps, and perhaps also syphilis. This peculiarity is that they are bilateral, and are accompanied with engorgement of the parotid and submaxillary glands. In a certain number of cases, as in that of one of our patients, the starting point had been some uterine trouble at the monopause, complicated with hæmorrhages from a fibromyoma of the uterus. We think that we have to do here with an infectious state of the organism, as after the engorgement of the lachrymal glands our patient presented a double plastic choroiditis. We have published quite an interesting case in the *Semaine Medicale*, June 23, 1895. The case was one of acute dacryoadenitis in an adult. In looking for a possible infection we were led to discover that that there existed a tonsillitis; one of tonsils, yet swollen and secreting, furnished a pus full of streptococci.

We all remember the interesting cases cited by Eales and Jonathan Hutchinson,[10] in which the cure was obtained by iodide of potassium. The patient of the last named author was an inhabitant of Calcutta who had come to London with his eyes exorbitic due to the swelling of the lachrymal glands. The parotid and cervical glands were also swollen.

[10]Opth. Soc. U. K., iv., p. 36, 1884.

From the facts and reflections contained in this paper let me be permitted to draw a certain number of deductions. If they are not yet very conclusive, they will have the advantage at least of fixing the attention of clinicians and will be, I hope, profitable to patients.

1. In the presence of a tumor of the orbit reputed sarcomatous, even should we be enlightened by the histological examination, we must think of the infectious origin and not have recourse to any operation until previous treatment has proved negative.

2. Among the means of treatment we possess, we must include mercury, iodine, arsenic, and toxitherapy as it has been attempted with erysipelas or the pure cultures of streptococci by Fenleisen,[11] Hoist,[12] and Ealey.[12] Lassar,[14] Sprank,[15] W. B. Johnson,[16] Coley,[17] and Repin[18] have used by preference the streptococcic serum, which is less dangerous, and whose toxicity can be increased by the addition in the cultures of the micrococcus prodigiosus. The injections are made into the tumor, at a remote point under the skin, or in the veins.

3. The research of the point of origin of the infection (nose, sinuses, pharynx) and the bacteriological determination of the toxins which are the cause, contribute to confirm the diagnosis and to lay down the basis for a rational medical treatment. It is only after this that we can have recourse to surgical interference, which is often powerless in the so-called sarcomata and lymphadenomata of the orbit.

The discussion was continued by

DR. HILL GRIFFITH (Manchester) referred to a case of orbital sarcoma, accompanied by an unusual amount of inflammatory action, in which the growth closely enveloped the

[11] Das Erysipel, Berlin, 1893.
[12] Ann. de l'Inst. Pasteur, p. 243, 1888.
[13] Amer. Journal of Med. Sciences, May, 1893.
[14] Deutsch. med. Woch. N. 29, 1881.
[15] Ann. de l'Inst. Pasteur, p. 883, 1892.
[16] New York Med. Rec., November 17, 1894.
[17] Amer. Journal of the Med. Sciences, July, 1894.
[18] Revue de Chir., p. 465, 1895.

whole eyeball. He asked if anyone had thought it advisable in cases of exophthalmos, without other symptoms, to divide one or other rectus tendon, and explore the deeper parts of the orbit.

PROF. FUCHS (Vienna) had observed a case of rhinoscleroma of both orbits, which had extended from the nasal cavity through the apex of the orbits. The most striking feature of the case was the early onset of immobility of the eyes.

DR. ARGYLL ROBERTSON wished to support the view expressed by Professor Panas; that cases which presented every symptom of organic tumor of the orbit could still be cured by medical treatment.

MR. NETTLESHIP mentioned a case of single proptosis, with hypertrophy or semisolid œdema of the tissues in the corresponding temporal fossa, which had been perfectly stationary for the last five years.

MR. SPENCER WATSON narrated a case in which double proptosis was cured after the removal of both inferior turbinal bones with other nasal growths.

MR. ADAMS FROST spoke of a case of a patient who presented symmetrical tumors in both lachrymal glands, one of which was excised and found to be small round-celled sarcoma, the other recovered under iodide of potassium.

[TO BE CONTINUED.]

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## OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

Thursday, June 13, 1895. D. ARGYLL ROBERTSON, M.D., F.R.S.E., President, in the chair.

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### OPHTHALMIA NODOSA.

This paper was read by Mr. Lawford. The disease was one to which the name ophthalmia nodosa was applied by Sæmisch, and which results from the penetration of the tissues

of the eye by the hairs of certain caterpillars. Mr. Lawford's case occurred in a lad, into whose right eye the foxmoth caterpillar (*Bombyx rubi*) had been thrown; this was followed by severe and protracted inflammation, which lasted with intermissions and remissions for six months, and ultimately subsided, leaving the eye little, if any, the worse. Two hairs were removed from the lower part of the conjunctiva, but none were discovered in the deeper tissues. The previonsly recorded instances of this disease, some eight or nine in number have all occurred in Germany, and in those cases in which it was possible to determine the kind of caterpillar, the larva of the pine-moth (*Bombyx pini*) or of the foxmoth (*Bombyx rubi*) was the one which had caused the ocular lesions. In most cases the caterpillar had been thrown at the patient by a playmate or companion. The clinical features of the disease are inflammation of conjunctiva, infiltration of the cornea, and generally severe iritis or iridocyclitis, with opacities in the vitreous. The development of small firm grey nodules in the conjunctiva, episcleral tissue, or iris has been noted in every case, and examination of these nodules microscopically reveals a structure very closely resembling tubercle, with numerous giant cells, and in the center a section of a hair. In several cases sight has been seriously and permanently damaged, generally by blocking of the pupil, but in no instance has total blindness resulted. The disease has always occurred in country folk and usually in children. One case is reported to have commenced in June, all the others in August, September, or October. Mr. Lawford described the varieties of caterpillar which are known to have given rise to this disease, and discussed the methods by which the lesions might be produced, expressing the opinion that the affection is probably toxic in origin, the poison being contained in the hairs, which in some caterpillars are connected at their bases with glands.

MR. HARTRIDGE suggested that the prolonged irritation might more probably be due to the migration of the buried caterpillar hairs than to the introduction of a poison at the time of the initial lesion.

MR. DONALD GUNN referred to a report, for the truth of which he could not personally vouch, that our troops in India are liable to inflammation of the eyes supposed to be due to the smooth-skinned green caterpillar crawling over the surface of the eyeballs while the men are asleep.

In reply, Mr. Lawford said that migration of the caterpillar hairs was supposed to take place only for a short time; the hairs then became encapsuled, and remained stationary until disintegrated. Moreover, the inflammatory symptoms were referable chiefly to the iris and ciliary body, even though there was usually no evidence to show that these structures had been penetrated by the hairs. As to the disease referred to among the troops in India, it must be of a nature quite different from ophthalmia nodosa, as the latter only occurred after forcible penetration of the hairs.

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NINE CASES OF CHANCRE OF THE EYELIDS AND CONJUNCTIVA.

Notes of these cases were read by Dr. Snell. The situations of the chancres were as follows: two at the internal canthus, one at the external canthus, three on the upper eyelid, one on the lower eyelid, one on the ocular and one on the palpebral conjunctiva. Three of the patients were as young as $2^1/_2$, 4, and 11, and the others were aged 20, 21, 28, 29, 30, and 55. The number of chancres on the eyelids or conjunctiva recorded in the *Transactions* of the Society were so few that it appeared as if his experience was altogether exceptional. He thought, however, it was possible that the true nature had not, perhaps, always been suspected. Bulkley gave the proportion to all extragenital chancres at 4 per cent. Generally the diagnosis was not difficult. In all his cases induration of the preauricular gland was present, and in some cases of the sub-maxillary glands also. The induration of these glands should suggest the specific character of the lesion. There was difficulty, as was usual in such cases, in ascertaining the exact mode of infection. One was assumed to have been occasioned by a scratch from a syphilitic infant the girl was nursing; in

another, the mother and her baby were syphilitic, whilst in a third both father and mother were so affected. Two were playmates, one of them coming under treatment shortly after the other; another was an inmate of a lodging house where four towels sufficed for eighty people.

MR. MARSHALL had watched a case at Moorfields somewhat resembling Mr. Snell's. The patient was a man, aged 20, who had an ulcer which did not yield to treatment till anti-syphilitic remedies were used.

MR. HILL GRIFFITH thought the chief interest of this class of cases lay in the diagnosis; until the secondary eruption appeared it was difficult to make a positive diagnosis. The two things with which it was likely to be confounded were: (1) A vaccine pustule, which occurs accidentally more often than is supposed; and (2) a tuberculous ulcer. He thought that the local inflammation resulting from vaccine pustule was usually more intense than that following chancre of the lid.

DR. BRONNER had seen eight or ten of these cases. He suspected that they were not so rare as was generally thought; the subjective symptoms are often slight, and patients do not come to the hospital for advice till it is too late to recognize the true nature of the sore.

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## CARD SPECIMENS.

The following were the card specimens: Mr. H. Secker Walker: (1) Sarcoma of the Iris; (2) Epithelioma of the Cornea and Conjunctiva; (3) Coloboma of the Iris and Choroid. Mr. Devereux Marshall: Cystic Sarcoma of the Ciliary Body. Mr. Morton: Microscopical Sections of Tumor of the Face. Mr. J. B. Lawford: Peculiar Colored Deposits in Crystalline Lenses. Mr. H. Work Dodd: Congenital Pigmentation of Retina. Mr. Silcock: (1) Congenital Anterior Synechia; (2) Tuberculosis of Eyeball Recovering. Mr. Nettleship: Case of Retinitis Proliferans. Mr. Doyne: (1) Case of Acromegaly; (2) Degeneration of Retinal Arteries. Dr. Beevor: Case of Ophthalmoplegia Externa.